REMARKS

Claims 1-6 are pending. Favorable reconsideration is respectfully requested.

Applicants would like to thank Examiner Kaushal for the helpful and courteous discussion held with their representative on December 2, 2005. During the discussion, the differences between the claimed methods and the cited references were discussed. The Examiner also provided applicants' representative with a copy of Kramer et al., Biochemistry 1997, 36, pp. 3151-3158, and Matsumoto et al., Journal of Cell Science, 117 (17), pp. 3797-3805. The following remarks expand on the discussion with the Examiner.

The present invention relates to a method for detecting negatively supercoiled DNA in cells, characterized by including the steps of incorporating biotinylated psoralen into cells, irradiating the cells with long-wavelength UV rays, causing the cells to react with adivin which has been labeled with a color-developing substance, a fluorescent substance, or a chemiluminescent substance, and measuring developed color, emitted fluorescence, or emitted chemiluminescence of the cells. See Claim 1.

The present invention also relates to a method for detecting a cell containing negatively supercoiled DNA, characterized by including the steps of incorporating biotinylated psoralen into cells, irradiating the cells with long-wavelength UV rays, causing the cells to react with adivin which has been labeled with a color-developing substance, a fluorescent substance, or a chemiluminescent substance, and measuring developed color, emitted fluorescence, or emitted chemiluminescence of the cells. See Claim 2.

The rejection of the claims under 35 U.S.C. §103(a) over Sinden et al. in view of Saffran et al. and Chevalier et al. is respectfully traversed. Those references fail to suggest the claimed methods.

The claimed methods specify the use of biotinylated psoralen while Sinden et al. describe the use of 4,5',8-trimethylpsoralen (see page 117, second column, top). The molecular size of biotinylated psoralen is much larger as compared to 4,5',8-trimethylpsoralen. Since molecular size is a major determinant of biological activity, one would not expect that biotinylated psoralen would function in cells in the same way as the trimethylpsoralen described by Sinden et al. For that reason, one would not have a reasonable expectation that biotinylated psoralen would interact with negatively supercoiled DNA in cells in the same way as 4,5',8-trimethylpsoralen.

Saffran et al. discloses biotinylated psoralen. See the Abstract. However, that reference fails to mention using biotinylated psoralen compound to react with negatively supercoiled DNA.

Chevalier et al. review the use of biotin and digoxigenin as labels fro light and electron microscopy. See the Abstract. The use of biotinylated psoralen to detect negatively supercoiled DNA is not described in that reference.

In view of the foregoing, the combination of Sinden et al., Saffrin et al. and Chevalier et al. fails to suggest the claimed methods.

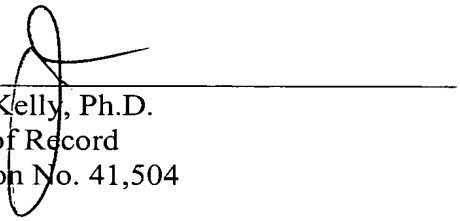
In addition, the use of biotinylated psoralen as claimed provides striking advantages as compared to the trimethylpsoralen. The method described by Sinden et al., i.e., the use of trimethylpsoralen requires the use of a very large number of DNAs in cells, as much as 10^6. In contrast, the claimed method does not require the use of such a large number of DNAs, because the use of biotinylated psoralen is sensitive enough to detect the negatively supercoiled DNA from only a single cell.

Sinden et al., Saffran et al. and Chevalier et al. fail to suggest the claimed methods. In addition, biotinylated psoralen provides striking advantages as compared to trimethylpsoralen. For those reasons, the claimed methods are not obvious over those references. Withdrawal of this ground of rejection is respectfully requested.

Applicants submit that the present application is in condition for allowance. Early notice to this effect is earnestly solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.
Norman F. Oblon



James J. Kelly, Ph.D.
Attorney of Record
Registration No. 41,504

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 06/04)